



# Does parent's psychological distress mediate the relationship between war trauma and psychosocial adjustment in children?

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## Abstract

This study investigated the impact of war trauma on behavioral and emotional disorders, and neuroticism in children by prospectively examining the potential mediator and/or moderator effects of parental psychological distress. The sample consisted of 205 parents and their children. The results indicated that parent's psychological distress did mediate and moderate the effect of trauma exposure on emotional and behavioral disorders in children. An integrated intervention which simultaneously targets children and parental distress symptoms is needed. The integrated intervention may intend to use trauma-focused cognitive behavioral therapy model that integrates cognitive, behavioral, interpersonal, and family therapy principles with trauma interventions.

## Keywords

children, distress, mediator, mental illness, moderator, psychological distress, risk factors, risk reduction, well-being

Children of war are at heightened risk for a full range of adjustment problems, including social and emotional difficulties and poor overall functioning. Furthermore, they are at specific risk for internalizing problems such as anxiety disorders and clinical depression (Cozza et al., 2010; Khamis, 2005, 2008, 2012a, 2012b; Laor et al., 2001; Medeiros, 2007; Morgos et al., 2007; Schoedl et al., 2014; Smith et al., 2002; Thabet et al., 2008). However, many children with war trauma do not develop adjustment problems, and thus the heterogeneity of outcomes in children demands further explication of the processes that account for and modify children's adjustment (Cummings et al., 2000; Khamis, 2012a). This mental health disparity

has led researchers to focus more attention on psychosocial factors that may contribute to the development and maintenance of psychosocial adjustment problems in children. Foremost among these psychosocial factors are negative coping, and fatalism (Khamis, 2008), religiosity and ideology (Khamis, 2012a), worry and posttraumatic stress disorder (PTSD) (Khamis, 2012b), temperament, self-esteem, the ability to

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respond to new situations (Almqvist and Broberg, 1999; Garmezy and Rutter, 1985), and family environment (Khamis, 2013b).

Additional potential risk factors like parent's distress has been suggested to influence the relationship between war-related trauma exposure and child's distress (Qouta et al., 2005), as parents are typically the most proximal and influential people in a child's development, particularly during the early years. Studies suggest that the effects of war atrocities affect not only the traumatized himself or herself but also people in his or her close environment through secondary victimization. Secondary victimization occur when people who come into close contact with the traumatized person may experience considerable emotional distress and may display PTSD-like responses similar to those exhibited by the primary survivor (Zerach et al., 2013). The assumption is that parents' distress indirectly affects children's well-being through its impact on parenting behavior (Dyb et al., 2011; Schwerdtfeger and Geoff, 2007). Research has found that parents' PTSD symptom severity negatively correlates with parental functioning (Solomon et al., 2011) and positively correlates with parenting stress (Renner, 2009). For example, previous research has demonstrated that depressed mothers engage in a number of potentially problematic parenting behaviors such as harsh and punitive disciplining (e.g. Banyard et al., 2003; Cohen et al., 2008; Lovejoy et al., 2000; McLearn et al., 2006) and conflict with children (Ruscio et al., 2002) which interfere with the ability to be a warm and consistent mother (Weissman and Paykel, 1974). However, recent meta-analyses of the literature (Lambert et al., 2014) indicated that findings have not always been consistent and the magnitude of effect sizes has varied considerably. While some studies failed to show any moderating effect of good maternal mental health in protecting child mental health from negative impact of war trauma (Qouta et al., 2005), others have found that good maternal mental health predicted children's good psychological adjustment after war trauma (Laor et al., 1997, 2001). Furthermore, it is not clear

whether the strength of the associations between parent and child symptoms differ in studies where only the parent had a history of trauma and those where both children and parents experienced the same events (Lambert et al., 2014; Laor et al., 2001). Psychological distress experienced by children in families where the parent has been traumatized by war atrocities could be associated with secondary traumatization, and the frequent use of ineffective coping strategies by the traumatized parent, mainly the mother (Khamis, 2013a). Research on associations between parental distress and child psychological status that includes both parents is clearly needed. This study aimed to expand upon previous research on war traumatic stress that links parental distress to children's well-being by including a sample where both parents and children experienced war trauma. The finding that both paternal and maternal psychological distress were significantly associated with child distress (Lambert et al., 2014) underscores the importance of considering both parents.

The present research was designed to broaden our understanding of the impact of war trauma on behavioral and emotional disorders, and neuroticism in children by prospectively examining the potential mediator and/or moderator effects of parental psychological distress. More specifically, it was hypothesized that (a) parental psychological distress mediates the effect of war trauma on behavioral and emotional disorders and neuroticism and (b) the relationship between war trauma and behavioral and emotional disorders and neuroticism should be attenuated for children who have parents with low levels of parental psychological distress and strengthened for children with high levels of parental psychological distress.

## **Method**

### *Sample selection and procedure*

The design for sample selection was based on three primary stratified variables: districts (North Gaza, Gaza, Deir AlBalah, Khan Younis, Rafah), families, and children with

proportional representation of both sexes and family roles (i.e. fathers, mothers). Data from the Palestine Central Bureau of Statistics for the 2013 census were used to draw a random sample of 220 families representing the five districts in Gaza Strip (see Table 1). Of the 220 families that were selected for entry into the study, 15 of the families declined to participate. Children then were selected randomly from each family with the help of parents and the available parent was asked to participate. Informed consent was obtained from children and parents. Participants were assured confidentiality and the anonymity of their responses. They were told that their participation was voluntary and that they could withdraw from the study at any time. The study has complied with the American Psychology Association's ethical standards in the treatment of the sample and ethical approval was obtained from the Gaza Community Mental Health Programme.

### Data collection

Four trained psychologists carried out the interviews with children at home. The interviewers have previous experience in working with children. Interviewers were given guidelines for data collection, and the use of the questionnaire. All interviewers were also asked to complete three questionnaires, to provide information about specific concerns including quality of questionnaire materials, ease of administration, reaction of the interviewees, content of the questionnaire, and to suggest ways to improve the final draft.

### Participants

The sample consisted of 205 families of whom 69 (33.7%) were fathers, 136 (66.3%) were mothers, 99 (48.3%) were boys, and 106 (51.7%) were girls. Children's age ranged from 9 to 18 years ( $M=13.56$ , standard deviation ( $SD$ )= $2.59$ ), whereas parents ages ranged from 38 to 57 years ( $M=40.94$ ,  $SD=7.89$ ). The average family size was large ( $M=7.20$ ,  $SD=2.25$ ). Family combined monthly gross income ranged from nil to US dollars 1700 ( $M=860.90$ ,  $SD=0.42$ ).

**Table 1.** Sample population and size.

District	Population percentage	Sample size	Sample percentage
North Gaza	322,126	39	19.5
Gaza	569,715	69	34.5
Deir AlBalah	238,807	29	14.5
Khan Younis	310,868	38	19
Rafah	202,777	25	12.5
Total	1,644,293	200	100

### Instrumentation

**Personal history form.** The personal history form collected demographic data on children such as gender, age, family size, and family combined monthly gross income.

**Trauma exposure scale.** Trauma exposure scale was developed for the purpose of the study to assess the type of trauma experienced during the 8 days of the Israeli war on Gaza Strip in November 2012. The scale is composed of 18 items scored as 1 "yes" and 0 "no." Responses are summed to arrive at a total scale score. Scores vary from 0 (no trauma exposure at all) to 18 (high trauma exposure). The statements were generated from interviews with scholars in psychology and psychiatry and from items derived from the Family Inventory of Political Stressors (FIPS; Khamis, 1998). Examples of the items are a family member, a relative, or a close friend was killed during the war, our house was bombarded or destructed, hearing the sounds of rocket attacks, shelling and bombardment, witnessing people injured. Using a principal component analysis with a varimax rotation of eigenvalues greater than or equal to 1.0, the scale generated one factor, namely, trauma exposure that explained 60.25% of the variance. Cronbach's  $\alpha$  for the total scale was .77.

**Behavioral and emotional disorders.** Behavioral and emotional disorders were assessed by the Strengths and Difficulties Questionnaire (SDQ; Child Form). The SDQ is a brief behavioral screening questionnaire that asks about 25 attributes, some positive and others negative (Goodman, 1997). The SDQ is administered to

children to investigate their emotional and behavioral disorders. The 25 items are divided between five subscales of five items each, generating scores that assess conduct problems, inattention-hyperactivity, emotional symptoms, peer problems, and prosocial behavior; all scales but the last are summed to generate a total difficulties scores. The predicted five-factor structure (emotional, conduct, hyperactivity-inattention, peer problems, and prosocial behavior) was confirmed. Internalizing and externalizing scales were relatively “uncontaminated” by one another. Reliability was generally satisfactory, whether judged by internal consistency (mean Cronbach  $\alpha$ : .73), cross-informant correlation (mean: 0.34), or retest stability after 4–6 months (mean: 0.62; Goodman, 2001). The SDQ has been validated and used in previous studies among Palestinian children (Khamis, 2013a). In this sample, Cronbach’s alpha was .72.

**Neuroticism.** Neuroticism was assessed by the neuroticism scale of Eysenck Personality Questionnaire (Eysenck and Eysenck, 1968). Children were asked to complete the 19-item Arabic version of the neuroticism scale (El Khalek, 1978), which asked children to answer yes or no questions about their negative affectivity. Composite scores could range from 0 to 19, with higher scores indicating higher neuroticism. The neuroticism scale shows good psychometric properties (Grayson, 1986). In the current study, internal consistency was good ( $\alpha = .87$ ).

**Parents psychological distress.** Parents’ psychological distress was assessed by the Symptom Checklist-90–Revised (SCL-90-R). The SCL-90-R is a 90-item self-report symptom inventory that assesses psychological distress in terms of nine primary symptom dimensions and three summary scores termed global scores (Derogatis, 1983). The principal symptom dimensions are labeled Somatization (SOM), Obsessive-Compulsive (OBS), Interpersonal Sensitivity (INT), Depression (DEP), Anxiety (ANX), Hostility (HOS), Phobic Anxiety (PHOB), Paranoid Ideation (PAR), and Psychoticism (PSY).

Reliability was very good. The internal consistency measures for the nine dimensions were quite satisfactory ranging between a low of .77 for psychoticism to a high of .90 for depression. The test–retest reliability ranged between .80 and .90, which is an appropriate level for measures of symptom constructs (Derogatis, 1983). In this sample, Cronbach’s alpha was .98. There are three global indices of distress associated with the SCL-90-R, the Global Severity Index (GSI), the Positive Symptom Distress (PSDI), and the Positive Symptom Total (PST). The GSI combines information on numbers of symptoms and intensity of perceived distress. The PSDI is a pure intensity measure, in a sense, corrected for numbers of symptoms. It functions very much as a measure of response style in the sense of communicating whether the person is augmenting or attenuating symptomatic distress in his or her style of reporting his or her disorder. The PST is simply a count of the number of symptoms the person reports as positive, that is, that he experiences as having to any degree. In this study, only the GSI was used to assess parents’ psychological distress.

## Results

### *Mediator effects*

According to Baron and Kenny (1986), four statistical criteria are required to demonstrate a mediator effect. First, the predictor variable must be related to the outcome. Second, the mediator variable must be related to the outcome. Third, the predictor must be related to the mediator. Fourth, after controlling for the effects of the mediator on the outcome, the relation between the predictor and the outcome must be significantly reduced.

As indicated in Table 2, all three relationships had significant positive correlations and met criteria for use in a mediational model. The standardized regression coefficient for the relationship between trauma exposure and emotional and behavioral disorders (SDQ) and neuroticism was significant (Criterion 1), and parent’s psychological distress was significantly

**Table 2.** Predictor and the outcome variables before and after controlling for the effects of the mediator variable parent's psychological distress.

Criteria	B	SE B	t	p
<b>Emotional and behavioral disorders</b>				
Trauma exposure→Emotional and behavioral disorders	.147	.119	2.12	.03
Parent's psychological distress→Emotional and behavioral disorders	.401	.521	6.234	.0001
Trauma exposure→Parent's psychological distress	.237	.014	3.48	.001
Trauma exposure→Emotional and behavioral disorders after controlling for parent's psychological distress	.078	.118	1.128	.261
<b>Neuroticism</b>				
Trauma exposure→Neuroticism	.243	.110	3.566	.0001
Parent's psychological distress→Neuroticism	.439	.484	6.968	.0001
Trauma exposure→Parent's psychological distress	.237	.014	3.48	.001
Trauma exposure→Neuroticism after controlling for parent's psychological distress	.100	.120	1.58	.116

related to emotional and behavioral disorders and neuroticism (Criterion 2). Also, the predictor variable trauma exposure was related to parent's psychological distress (Criterion 3). Furthermore, after controlling for the effects of parent's psychological distress on emotional and behavioral disorders and neuroticism, the relation between trauma exposure and emotional and behavioral disorders and neuroticism became nonsignificant. Thus, the results indicated that there is full mediation: parent's psychological distress was found to mediate emotional and behavioral disorders and neuroticism (Criterion 4; see Table 3).

### Moderator effects

Two separate hierarchal regression analyses were performed to examine the interactive effects of trauma exposure and parent's psychological distress in predicting the occurrence of emotional and behavioral disorders and neuroticism in children. As recommended by Aiken and West (1991), the continuous variable (parent's psychological distress) was centered (i.e. sample mean was subtracted from each child's score) before creating interaction terms. This technique is intended both to reduce multicollinearity and to facilitate interpretation of interaction terms.

Results of the hierarchal regression models are presented in Table 4. In the first step, trauma exposure accounted for 2.1% of the variance in emotional and behavioral disorders among children. Adding parent's psychological distress in the second step did produce a significant increase (7.5%) in the amount of variance in emotional and behavioral disorders. Parent's psychological distress did directly predict emotional and behavioral disorders. However, when the second model was examined, the *B* weight for trauma exposure was no longer statistically significant (see Table 4). In the third regression step, the addition of the trauma exposure  $\times$  parent's psychological distress interaction term to the additive model of trauma exposure and parent's psychological distress did yield a significant change in  $R^2$  (.003). Thus, parent's psychological distress did moderate the effect of trauma exposure on emotional and behavioral disorders in children. The nature of these interactions indicate that trauma exposure increased the levels of emotional and behavioral disorders for children whom their parents reported higher levels of psychological distress, suggesting that the impact of trauma exposure may have been a slightly stronger risk factor for emotional and behavioral disorders among children whom their parents exhibited psychological distress.

**Table 3.** Intercorrelations of the predictor and the outcome variables before and after controlling for the effects of the mediator variable parent's psychological distress.

	1	2	3	4	After controlling for parent's psychological distress
	1				
1. Trauma exposure	–				
2. Emotional and behavioral disorders (SDQ)	.14*	–		.30****	.07
3. Neuroticism	.21**		–	.44****	.11
4. Parent's psychological distress	.24***			–	

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ ; \*\*\*\* $p < .0001$ .

**Table 4.** Hierarchical regression models predicting the occurrence of emotional and behavioral disorders and neuroticism in children.

Emotional and behavioral disorders	beta	$R^2$	$t$	$p$
Step 1				
Trauma exposure	.144	.021	2.08	.03
Step 2				
Trauma exposure	.078		1.12	.26
Parent's psychological distress	.281	.096	4.08	.0001
Step 3				
Trauma exposure	.067		.96	.33
Parent's psychological distress	.107		.52	.59
Trauma exposure × Parent's psychological distress	.187	.099	.90	.36
Neuroticism				
Step 1				
Trauma exposure	.243	.059	3.56	.0001
Step 2				
Trauma exposure	.147		2.28	.02
Parent's psychological distress	.404	.213	6.29	.0001
Step 3				
Trauma exposure	.159		2.44	.01
Parent's psychological distress	.614		3.23	.001
Trauma exposure × Parent's psychological distress	-.225	.219	-1.17	.24

In contrast, trauma exposure accounted for 5.9% of the variance in neuroticism among children. Adding the parent's psychological distress variable in the second step did produce a significant increase (15.4%) in the amount of variance in neuroticism. Addition of the parent's psychological × trauma exposure interaction term to the

additive model of parent's psychological distress and trauma exposure resulted in significant change in  $R^2$  (.006%) indicating that parent's psychological distress had a significant moderator effect on neuroticism. Accordingly, trauma exposure was more strongly associated with neuroticism in children in the context of high

levels of parent's psychological distress (see Table 4).

## Discussion

Parental distress was associated with children's behavioral and emotional disorders, and neuroticism particularly among those reporting high levels of war trauma exposure. The results of this study underscore the psychological damage that results from war trauma among Palestinian children and their parents. Indeed, a significant relationship between war trauma and emotional and behavioral disorders, and neuroticism was observed. As seen in the current study, exposure to war trauma may represent a significant risk to the healthy development of children, and may increase parental stress, which in turn can heighten children's adjustment difficulties. These findings are consistent with previous research demonstrating a link between war trauma, childhood disorders (Khamis, 1993, 2005, 2008; Qouta et al., 2005), and parent's psychological distress (Khamis, 2000).

The overall pattern of the results indicated that parents' psychological distress mediated and moderated the relationship between war trauma and children's developmental outcomes including emotional and behavioral disorders and neuroticism. The current findings suggest that when the influence of parents' psychological distress was controlled, war trauma was not related to emotional and behavioral disorders, namely, conduct-oppositional disorders, hyperactivity-inattention disorders, and anxiety-depressive disorders, or to neuroticism.

Consistent with a moderator effect, the results of the study revealed a stronger link between war trauma and subsequent behavioral and emotional disorders and neuroticism in the context of high levels of parents' psychological distress. While these results were consistent with previous studies that investigated the potential moderating effect of parental distress on the relation between adolescents' acute stress and PTSD (Gil-Rivas et al., 2007), the results of other studies failed to show any moderating effect of good maternal mental health or low neuroticism in protecting

child mental health from negative impact of war trauma (Qouta et al., 2005). However, the link between children's symptomatology and parental psychological distress symptoms may best be understood within a developmental-transactional model whereby parental distress symptoms and child disruptive behavior reciprocally influence one another (Nicholson et al., 2011). The parent-child relationship involves a dynamic interplay between dyadic emotions and behaviors (Cummings et al., 2000; Whitman et al., 2001). For example, parent's psychological distress may evidence higher rates of irritability and aggression, which in turn may induce distress, anger, and behavior problems in children (Cummings et al., 2000). Conversely, children's resulting emotional and behavioral problems may lead some parents to feel overwhelmed and frustrated, thereby exacerbating the severity of parental psychological distress (Feske et al., 2001; Forbes et al., 2008; Frye and Garber, 2005).

The data from this study reveal that parental stress plays a pivotal role in posttraumatic emotional and behavioral disorders and neuroticism in children. The strong positive relationship between parental stress and child's outcomes in this sample poses some challenges for theoretical models. A primary implication of this study highlights the importance of exploring whether parental stress increases as a function of child's emotional and behavioral disorders, whether child's emotional and behavioral disorders increase as a function of parental stress, whether parental stress and child's emotional and behavioral disorders reciprocally predict each other, or whether the relation is spurious because of third variables that affect both parental stress and child's emotional and behavioral disorders. Many researchers have documented parenting difficulties in families with a child with attention-deficit/hyperactivity disorder (ADHD), particularly if the child also shows oppositional or conduct problems. It may be that children's reactions to war trauma may be shaped in part by the level of parenting stress their caregiver is experiencing. For example, previous studies (e.g. Laor et al., 2001) revealed that consistent

parenting-related impairments were associated with poor psychological functioning in the mother, including poorer object relations, more immature defenses, and increased psychological symptoms. In addition, research has shown that parental support and family functioning are critical to how young children respond to trauma exposure (e.g. Lieberman and Knorr, 2007; Scheeringa and Zeanah, 2001); thus, it is unsurprising that children's reactions to war trauma may be shaped in part by the level of parenting stress their caregiver is experiencing. This suggests that interventions for children exposed to war trauma should also assess and address caregivers' needs.

Evidence demonstrating that parental psychological distress symptoms predict developmental outcomes for children who were exposed to war atrocities provides a strong rationale for an integrated intervention which simultaneously targets children and parental distress symptoms (Wickramaratne et al., 2011). The integrated intervention may intend to use trauma-focused cognitive behavioral therapy model (TF-CBT; Cohen et al., 2006b) that integrates cognitive behavioral, interpersonal, and family therapy principles with trauma interventions. The interventions target specifically PTSD symptoms, such as depression, anxiety, trauma-related shame, and trauma-related maladaptive cognitions. The method also includes a parenting component which enhances parental support, decreases parental distress, and improves positive parenting practices (Cohen et al., 2006a, 2006b).

As with any study, the current findings should be considered within the context of study limitations. First, the cross-sectional nature of the data does not allow us to test the directionality of the constructs of parental stress, emotional and behavioral disorders, and neuroticism. Further research should include longitudinal analyses because they can indicate whether the data are consistent with a causal model of the temporal relationships between variables. Second, any generalization of the results may be limited by the fact that the data did not include assessments of previous

traumatic experiences, especially in early life. Third, parental stress may determine only a small part of child outcomes. It is also worth contemplating how other family factors, independent of parental distress, might contribute to psychosocial and socioemotional difficulties in children. Fourth, the study included either mothers or fathers from the participating families. It should be noted that the effect of parental distress on children's well-being should ideally be studied by including both parents.

In conclusion, this study provides an impetus for child clinicians to consider recommending treatment for parental psychological distress as an adjunct to child treatment when children of distressed parents seek treatment. Future research should examine the mechanisms underlying the link between parental psychological distress and child outcomes.

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